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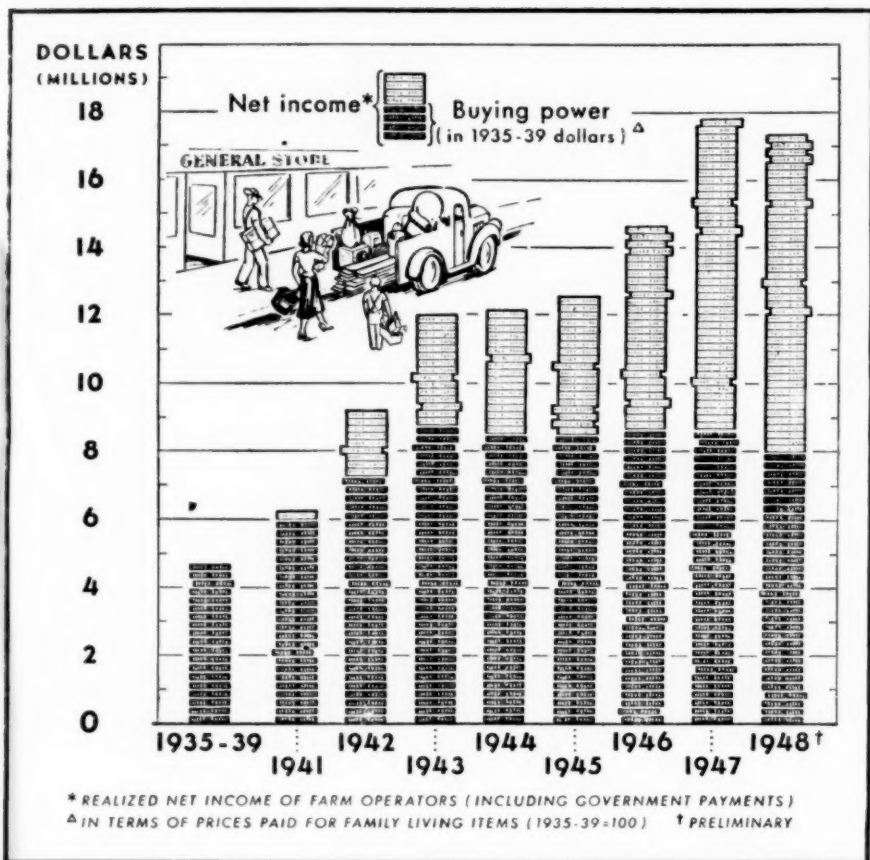
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Buying Power of Farmers' Net Income in '48 Lowest Since '42



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LAST YEAR, farmers netted \$2.72 from their farming operations for every dollar they received in 1941. But their 1948 net income would buy only about 30 percent more family living items than it would the year we entered the war.

The chart shows the purchasing power of realized net income of farm operators in terms of prices farmers paid for family living items in 1935-39. The year we entered the war, net farm income totaled 6.4 billion dollars. Prices were only slightly higher than prewar and the buying power of net farm income was 6 billion dollars.

Farm purchasing power reached its

peak in 1943. In that year, net farm income was 12.1 billion dollars and its buying power, in terms of 1935-39 prices, was 8.8 billions.

Farm income rose sharply after the war ended, but prices rose even more. In 1947, farmers netted a record 17.8 billion dollars. However, this would buy only as much family living items as 8.6 billions in 1935-39.

Realized net income of farm operators last year was down 2 percent from 1947, early estimates indicate. Prices farmers paid for family living items continued up and the buying power of net farm income at 7.9 billions was the lowest since 1942.

Fifth Straight Drop

Livestock Numbers Down Again

LIVESTOCK and poultry numbers declined during 1948 for the fifth straight year but the drop was only one percent, the smallest since 1944 according to BAE's annual inventory.

During 1946 and 1947, numbers of all species of livestock and poultry declined. During 1948, however, the number of cattle, hogs and turkeys increased but not enough to offset the decline in other farm animals.

The January 1 inventory showed that the number of poultry was down 2 percent from January 1, 1948. Meat animals—cattle, hogs and sheep—showed little change. Milk animals—milk cows and heifers and heifer calves for milk—were down 2 percent and work stock 9 percent.

Horses Down 10 Percent

The total number of livestock and poultry is now 18 percent below the 1944 peak but is still 3 percent higher than the 1935-29 average. Compared with that prewar period, we have 14 percent more meat animals, 10 percent more poultry and about the same number of milk animals.

The rapid decline of horses and mules continued in 1948, the former falling off 10 percent and the latter seven percent. The number of horses is now the lowest on record while mules

are down to the lowest point since 1890. Further declines are certain. The record small colt crops of the last 3 years are far short of the number needed to replace normal death loss, let alone offset the record slaughter of the past 2 years.

Lowest This Century

Prices of horses and mules offer little incentive to farmers to increase their colt crops. Prices for horses have dropped steadily since 1943 and the value per head on January 1 was the lowest in this century.

A slight increase in the number of cattle in 1948 halted the decline that began in 1945, despite a 2 percent drop in milk cows. The number of beef cows was about the same while beef heifers were up 4 percent, calves 1 percent and steers 10 percent. Inventories of cattle kept mainly for beef production, including beef breeding herds, increased in many western range States. There was a big increase in steers in the important cattle feeding States in the Corn Belt.

It is not entirely certain whether the number of cattle will start another upward trend in 1949 or whether they will level off for a few years. Changes in cattle numbers varied widely by States. Declines in some States prob-

Livestock on Farms January 1

Class of livestock	Number on farms January 1			Farm value per head January 1		
	Average 1938-47	1948	1949	Average 1938-47	1948	1949
	Thousand head	Thousand head	Thousand head	Dollars	Dollars	Dollars
Cattle.....	76,312	78,126	78,495	59.20	116.00	135.00
Milk cows.....	26,118	25,039	24,450	86.40	164.00	193.00
Hogs.....	60,584	55,028	57,139	17.50	42.80	38.20
All sheep.....	49,736	34,827	31,963			
Stock sheep.....	43,329	29,976	27,818	8.22	15.00	17.00
Horses.....	9,495	6,589	5,921	72.50	55.50	52.30
Mules.....	3,620	2,541	2,353	125.00	133.00	117.00
Chickens.....	479,166	461,550	448,838	.969	1.44	1.66
Turkeys.....	7,221	4,450	5,493	4.03	6.87	8.68

ably have not run their course. In addition, the number of cows and heifers one year old and over—both milk and beef—declined about one percent in 1948. In other years when the trend in cattle numbers started upward, cows and heifers increased.

Could Support More Cattle

Although the cow herd has been declining, it still is over 40 million. It could produce 32 to 34 million calves a year, enough to maintain inventories and permit beef and veal production to stay fairly high.

Our land resources could support a much larger cattle population than in the early 1930's. Declines in horse and mule numbers has released a considerable acreage that can be used for cattle. Drastic declines in the number of sheep in the last 7 years has had a similar effect.

A record corn crop and declining corn prices turned hog production upward in 1940. On January 1 the number of hogs was up four percent from a year earlier. All of the increase was in hogs under 6 months. More sows and gilts were being held for farrowing the spring pig crop than at the beginning of 1948, but the number of other hogs 6 months and over was down 7 percent.

Because of this smaller number, hog marketings are not likely to exceed the rate of a year earlier until after April. A larger 1949 spring pig crop will keep marketings in the last quarter above those of October-December 1948.

The number of sheep continued to decline. Stock sheep numbers are 44 percent below the peak of January 1, 1942, and the lowest on record.

The decline in sheep is not likely to be ended this year. The number of ewe lambs declined again. The number held for replacement is about 18 percent of the number of ewes one year old and over. This is more than last year but not enough to check the decline in the number of stock sheep unless the proportion of ewes slaughtered drops to about 5 percent or less of total sheep and lamb slaughter. This would be far below the percentage of ewes slaughtered in any year since 1941.

With a further decline in the number of sheep in prospect, production of lamb

and mutton will be low for several years. Shorn wool production also is expected to be the lowest on record in the next few years.

The number of chickens on farms, excluding commercial broilers, January 1 was down 3 percent from the beginning of 1948 and was the smallest since 1941. Farmers raised fewer pullets in 1948 than in 1947 but kept a larger proportion on their farms.

Many trends for the poultry industry were reversed during 1948. Early in the year, feed prices were high and unfavorable in relation to egg and chicken prices, and the trend in chicken and egg production was downward. As the season advanced the cost of the poultry ration declined and became progressively more favorable in comparison with egg and chicken prices. This stimulated interest in chicken and egg production, and encouraged a marked increase in commercial broiler production during the last half of the year. Egg production per hen has been at a record rate since last April.

Intentions reveal a prospective increase of 7 percent for chickens to be raised in 1949. Barring short feed crops and high feed prices relative to those for chicken and eggs in 1949, or a severe break in poultry prices, chicken and egg production on farms should continue upward and exceed the 1948 output, even though the January 1, 1949 population was down somewhat for all chickens and for the laying flock.

More Turkeys

Turkey production in 1948 was on a greatly reduced scale compared with 1947. Prices during the main marketing season were at record levels attracting more grower interest in turkeys for 1949. The turkey population on January 1, 1949 was 23 percent above a year earlier, and breeder hens were up 33 percent, reflecting a substantial increase in intentions for turkeys to be raised in 1949. The large increase in breeder hens is expected to provide enough eggs to meet the prospective increase of 25 percent in the 1949 turkey crop.

A. V. Nordquist
Bureau of Agricultural Economics

Milk Consumption Increases

CONSUMERS in 11 northeastern marketing areas used considerably more milk per person in 1947 than in 1940, according to a recent study of the Bureau of Agricultural Economics. The study was made possible by funds provided under the Research and Marketing Act of 1946.

Gains in daily consumption per person ranged from 49 percent in the Buffalo (Niagara Frontier) market down to 16 percent in the New York City area (see accompanying table). Generally, increases were greatest in areas where consumers used relatively small amounts of milk in 1940. On the other hand, gains were smallest in areas where daily consumption per person in 1940 was high.

Baltimore An Exception

The chief exception was Baltimore. Even though consumption in 1940 was relatively small, this market was not among those showing the largest gains in 1947. However, the study points out,

figures from Baltimore might have been different if fluid milk sales reported had included skim milk and part-skim items such as chocolate milk and buttermilk. These items were included in reports for all other areas except Richmond and Pittsburgh.

Cream Sales Down

In contrast to the increase in fluid milk consumption, daily cream sales per person declined from 1940 to 1947 in all markets for which information was available. The largest drop was 38 percent in New York City, the smallest, 9 percent in Pittsburgh (Allegheny County). During the war, sales of cream declined as a result of war food orders which limited the sale of butterfat in the form of cream. Because of the decline in cream use, combined fluid milk and cream sales (shown as milk and cream in milk equivalent in the table) increased less than fluid milk alone.

P. E. O'Donnell
Bureau of Agricultural Economics

Changes in Milk and Cream Consumption

Market area	Daily per capita consumption						Percent change 1947 over 1940		
	Milk		Cream		Milk and cream in milk equivalent		Milk	Cream	Milk and cream in milk equivalent
	1940	1947	1940	1947	1940	1947			
	<i>Pints</i>	<i>Pints</i>	<i>Pints</i>	<i>Pints</i>	<i>Pints</i>	<i>Pints</i>			
Boston.....	0.72	0.85					+18		
Rhode Island.....	.59	.83	0.18	0.16	0.78	0.98	+41	-11	+26
Connecticut.....	.69	.90					+30		
New York City.....	.74	.85	.26	.16	1.00	1.02	+16	-38	+2
Buffalo.....	.51	.75	.14	.11	.65	.87	+49	-21	+34
Rochester.....	.63	.77	.12	.10	.75	.87	+22	-17	+16
New Jersey.....	.63	.80	.17	.14	.80	.94	+27	-18	+18
Pittsburgh.....	.46	.65	.11	.10	.57	.75	+41	-9	+32
Baltimore.....	.48	.63	.08	.05	.56	.69	+31	-37	+23
Washington, D. C.....	.55	.75					+38		
Richmond.....	.36	.53	.07	.05	.43	.58	+47	-29	+35

Are Farmers Buying

Too Much Machinery?

RECORD sales of farm machinery at high prices in recent years have raised the question in the minds of many as to whether farmers generally are over-mechanizing their operations.

Not enough information is available to answer the question for the whole country. However, a study made by the Wisconsin Agricultural Experiment Station and the Bureau of Agricultural Economics throws considerable light on what happened in one State during the last 2 years.

Buy Many Machines

Wisconsin farmers in recent years have bought more machinery than ever before. Many dealers still have big waiting lists for tractors, tractor-drawn corn planters, fertilizer drills, combines, hay balers, forage choppers and corn pickers. To find out how farmers used their new machines and how much labor was saved, 120 farmers and 25 machinery dealers were interviewed in Jefferson and Trempealeau Counties. The former was chosen as representative of farming in southeastern Wisconsin while Trempealeau was selected as typical of the western part of the State.

Twenty-five dealers in the two counties sold nearly 400 tractors in 1947 and 1948. Most of them were two-plow units although a few one-plow and three-plow machines were sold. More than half of these tractors went on farms which did not increase in size and which already had one machine. The new tractors, therefore, were an addition of power. Less than a fifth of these farmers reported doing much custom work and only one or two said this was the reason for buying the second tractor.

The rest of the tractors purchased in the last two years replaced worn-out machines, or were bought because the farm acreage has been increased.

After buying new tractors, farms with two or more averaged 60 acres of cropland per tractor. The new machine was used for common farm operations and the old one for additional power during rush seasons. Twenty to 30 percent of the farmers interviewed who had bought a second tractor appeared to have too much invested in them for the size of the farm operated. However, almost all of these farmers were free of debt and paid cash for their second tractor.

For every 10 tractors sold by dealers in the two counties, about one combine was sold, most of which had a 5-foot cut. Farmers who bought these combines used them to harvest an average of 60 acres of their own and 64 acres of their neighbors' small grains each year. Seventeen out of every 20 did some custom work.

Around 20 percent of the farmers interviewed used their combines on fewer than 50 acres. Apparently many of these small farmers looked upon their new combines as a convenience which they felt they could afford in view of the high prices for farm products.

Harvesting small grains or clover with combines takes about half as much labor as threshing if the straw is left in the field. However, the saving is only about 1.5 man-hours of labor per acre if the grain is combined and the straw baled.

Most Were Profitable

Most of the combines cost from \$1,000 to \$1,400 and depreciation, interest and repairs average \$175 a year. Since on the average each combine was used enough to save 175 to 200 hours of man labor a year plus some savings in power they were a profitable investment. However, farmers harvesting fewer than 60 acres of crops with the combines could probably save money by

hiring their crops combined or by threshing.

One-man hay balers are one of the most popular of the new harvesting machines but they save only a small amount of labor. Farmers with as much as 100 tons of hay to harvest—more than average—save only 50 hours of man labor.

Average 12,000 Bales

Farmers who used one-man hay balers in 1947 and 1948 baled an average of 3,000 bales on their own farms and 9,000 for neighbors. Although this saved around 200 hours of man labor per machine, the saving was not enough to cover depreciation, interest and repairs on a machine that costs from \$2,500 to \$3,000. However, the baler has other advantages. It speeds up haying, reduces the storage space needed, and many farmers find bales easier to handle than loose hay.

Thirty-six farmers were interviewed, who bought field forage harvesters in 1947 or 1948. They had an average of 175 acres of crops per farm. In the latter year, these machines were used to harvest 20 acres of corn, 31 acres of hay or grass silage and 3 acres of straw on the home place. On neighboring farms, the machines harvested an average of 37 acres of corn, 25 acres of hay or grass silage and 3 acres of straw—a total of 119 acres per harvester. The savings in man labor over putting up loose hay with a loader was .8 hour per acre; over baling the straw in the field with a pick-up baler, half an hour per acre; and the saving over filling the silo with the usual corn binder and hand loading and unloading of bundles was 6 hours per acre. The total saving of man hours per machine was 390.

Forage Harvesters Costly

Most of these forage harvesters were in the \$2,500 to \$3,000 price class and the cost of special wagons to haul the chopped forage brought the total to the \$3,000 to \$3,600 range. A fair annual charge for depreciation, interest and repairs for this equipment plus the blower that elevates the forage into barn or silo seems to be \$500. This is about \$300 more than charges for one silage cutter, one corn binder and one

hay loader, but may not represent extra investment if it replaces haying and silo filling machinery on 3 farms.

One important contribution of the field forage harvester which should be taken into consideration in figuring costs is its value in increasing the making of grass silage. Grass silage can be made as easily as dry hay and contains about 10 percent more nutrients.

Among the machines purchased by the Wisconsin farmers, the biggest saving in man labor was made by the two-row corn pickers. They were used to harvest an average of 120 acres per machine with a saving of about 650 hours. One-row pickers also resulted in a substantial saving. Used to harvest an average of 85 acres, they saved an average of 375 hours.

A full line of modern labor saving machinery is a large investment for the average Wisconsin farm. For a two-tractor farm, for instance, a full line including a field forage harvester, a combine and a corn picker will cost \$12,000 to \$15,000 at current prices. This could result in excessive costs if prices fall from current levels. However, most of the farmers interviewed in the Wisconsin study have made profitable farm machinery investments in view of the work done or the labor situation facing the farmer.

A Few In Trouble

Only about a fifth of these farmers were using their new machines on such a small acreage that savings in labor would not offset the annual overhead and operating costs. Most of these farmers were operating their farms without hired labor and did not have children at home. They bought the new machines to lighten the work load and to eliminate the necessity of hiring labor. They were not interested in doing custom work to help pay for the machines because of the pressure of work on their own farms. In most cases they had the money to pay for the machinery. But large investment had put a few in serious financial difficulties.

Walter Wilcox
*Wisconsin Agricultural Experiment
Station*

Emil Rauchenstein
Bureau of Agricultural Economics

Electrification of U. S. Farms

Nears the Three-Quarter Mark

RURAL American is lighting up. Slightly more than two-thirds of all farms in the Nation were receiving central-station electric service in mid-1948. If power line construction continues at the present pace, at least three-fourths of all farms will have this service by June 30, 1949.

New Lines Up Rapidly

In order that these farms and many rural nonfarm homes and rural establishments could have central-station service, a tremendous volume of rural power line construction has been completed. Fourteen years ago, only 11 percent of our farms were so electrified. During the next ten years an average of 194,000 farms were electrified each year and since 1945, the rate has almost doubled. Additional electrification is proceeding rapidly but is being delayed somewhat by the shortage of some line construction materials and by a lack of power in some areas.

Progress toward complete rural electrification is shown by the accompanying map. States most completely served are densely populated and have considerable industry. Close behind are the Pacific Coast States where hy-

droelectric power has been extensively developed. Lowest in percentage are the Great Plains and some southern States but progress has been rapid in these areas the past decade.

Power lines to distribute electric power in rural areas have been constructed by rural electric cooperatives, power companies, towns and cities, public power districts, and other public and private groups. Fifty-three percent of all farms electrified since 1935 are served by power lines financed by the Rural Electrification Administration. The rest were financed by other sources.

REA is a lending agency. The facilities that are financed by REA are actually owned and operated by the borrowers. REA is authorized to make loans to persons, corporations, cooperatives and other organizations for financing the construction and operation of facilities "for the furnishing of electric energy to persons in rural areas who are not now receiving central-station service."

Since 1935 the Congress has authorized 1.9 billion dollars for rural electrification loans by REA. Of this, 1.4 billion had been loaned by June 30, 1948.

35-Year Maximum on Loans

REA loans are made on a self-liquidating basis for not longer than 35 years. Interest on the unpaid principal is 2 percent per year.

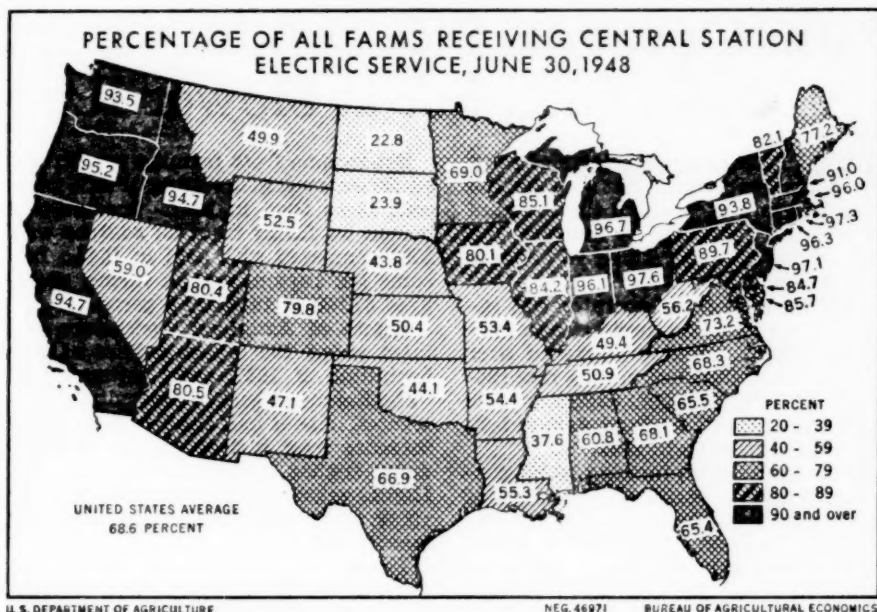
By June 30, 1948 slightly more than 150 million dollars in interest and principal had come due on REA loans. Less than one million was overdue 30 days or more while 19 million dollars had been paid in advance.

The bulk of the loans made by REA have been to 957 rural electric cooperatives organized on a nonprofit basis and incorporated under the laws of the States in which they are located. The "average" cooperative now has about 800 miles of energized power line serving approximately 2,500 members.

Farms With Central-Station Electric Service¹

Date	Farms	Proportion of all farms
	Number	Percent
Dec. 31, 1919.....	100,000	1.6
Dec. 31, 1924.....	204,780	3.2
Dec. 31, 1929.....	576,150	9.5
Dec. 31, 1934.....	743,950	10.9
Apr. 1, 1940.....	1,853,219	30.4
Jan. 1, 1945.....	2,679,184	45.7
June 30, 1946.....	3,180,303	51.3
June 30, 1947.....	3,574,611	61.0
June 30, 1948.....	4,019,476	68.6

¹ Estimates for 1919-34 from Edison Electric Institute; 1940 from U. S. Census of Agriculture; 1945 to 1948 from Rural Electrification Administration.



Three-fourths or more of the members are farmers. The rest are stores, schools, churches, and other rural establishments and rural nonfarm residents.

Seek Complete Coverage

A basic objective of rural electric cooperatives is to make central-station electric service available to all potential consumers within the areas covered by their systems. More than three-fourths of the cooperatives have made detailed engineering plans for complete coverage.

Rural electric cooperatives had borrowed 96 percent of the total loaned by REA to June 30, 1948. The rest was loaned to 41 public power bodies, 20 municipalities and other public bodies and 20 power companies.

About 1.8 million farms, an estimated 2 million rural nonfarm homes and an undetermined number of other rural establishments still did not have central-station service on July 1, 1948. Not until electric power is available to all of these will the job be complete.

Merely constructing electric distribution lines within service distance of the farms is not enough. If the service is to be satisfactory to the farmer the

power on the line must be adequate and dependable and sold at a price he can afford. When these conditions have been met, farmers generally use much more electricity than was expected a few years ago. In many areas, however, the supply is so inadequate or unreliable that the use of electricity on farms is substantially reduced. Power shortages are causing many companies to limit service until additional generating capacity can be installed.

Studies Under Way

Studies of factors affecting electric power consumption on farms are now being made by the Bureau of Agricultural Economics in cooperation with the State Agricultural Experiment Stations to shed light on problems facing power distributors, as well as to indicate the possibilities of using more electricity on farms to increase production efficiency and improve farm living.

Joe F. Davis
Bureau of Agricultural Economics

Farm Operators Net Less in '48; Assets Rise, but at Slower Rate

THE REALIZED net income of farm operators dropped last year for the first time in a decade and the assets of agriculture continued to increase, but at a slower rate, according to preliminary estimates.

The drop in farm operator net income was due to the rapid rise in production costs. Farmers grossed over 35.5 billion dollars last year, a new record. After production expenses were paid they had 17.4 billion dollars left, 2 percent less than in 1947.

Net income from farming to all persons on farms—realized net income of farm operators, plus wages paid to farm workers living on farms, plus or minus the net change in inventory—increased again in 1948. Persons on farms also received more from nonfarm sources such as wages and investments.

Net income from farming per person on farms averaged \$716 in 1948, 6 percent more than in 1947. Income per person on farms from all sources was \$309 compared with \$351 in 1947. Income per person, not on farms, averaged \$1,569 in 1948, up 8 percent.

Assets of American agriculture totaled about 130 billion dollars at the beginning of 1949, early estimates of "The Balance Sheet of Agriculture" indicates. About half the 8-billion-dollar increase over a year earlier resulted from higher values for real estate. Higher values for farm machinery, livestock, and motor vehicles accounted for most of the rest.

Farmers' cash on hand or in the bank went down in 1948, the first decline since before the war. The change was small and farmers invested more in

Farm Income and Production Expenses

Item	1935-39 average	1947	1948 ¹
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>
Cash receipts from farm marketings.....	7, 982	30, 186	31, 019
Government payments to farmers.....	503	314	293
Home consumption of farm products.....	1, 327	3, 105	3, 123
Rental value of farm dwellings.....	622	1, 100	1, 162
Gross farm income.....	10, 434	34, 705	35, 597
Farm production expenses.....	5, 651	16, 874	18, 169
Farm operators realized net income.....	4, 783	17, 831	17, 428
Net change in farm inventories ²	+6	-1, 235	+94
Farm wages to laborers on farms.....	661	1, 952	2, 113
Net income of persons on farms from farming.....	5, 450	18, 548	19, 635
Income of farm population from nonfarm sources.....	2, 090	4, 900	5, 300
Income of farm population from all sources.....	7, 540	23, 448	24, 935
Income of nonfarm population ³	58, 779	167, 351	185, 125
Total national income ³	66, 319	190, 799	210, 060
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Net income per person on farms from farming.....	176	673	716
Income per person on farms from nonagricultural sources.....	67	178	193
Income per person on farms from all sources.....	243	851	909
Income per person not on farms.....	603	1, 431	1, 569

¹ Data for 1948 are preliminary.

² This includes crops held for sale on farms. The net change is the physical volume of crops and livestock for sale on hand at the end of the year minus the physical volume at the beginning of the year, with the change in physical volume valued at year-end prices.

³ This is the series on national income used in determining income parity for agriculture. It is based on Department of Commerce estimates of nonagricultural income.

United States savings bonds. However, it may indicate the start of a downtrend in farmers' holdings of liquid assets since their costs are increasing faster than their income.

Farm-real-estate debt rose about 260 million dollars in 1948 and is the high-

est since 1944. Non-real-estate debt owed to principal institutions—excluding loans held or guaranteed by CCC—also was higher than in 1947.

Norman J. Wall
Ernest W. Grove
Bureau of Agricultural Economics

Balance Sheet of Agriculture

Item	Jan. 1, 1940	Jan. 1, 1948	Jan. 1, 1949 ¹	Net change 1948-49
	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>	<i>Million dollars</i>
ASSETS				
Physical assets:				
Real estate.....	33,642	62,813	66,900	4,087
Non-real-estate:				
Livestock.....	5,133	13,451	14,600	1,149
Machinery and motor vehicles.....	3,135	9,174	12,000	2,826
Crops, stored on and off farms ²	2,645	8,830	8,500	-330
Household equipment ³	4,275	5,415	6,000	585
Financial assets:				
Deposits and currency.....	3,900	15,600	15,200	-400
United States savings bonds.....	249	4,745	5,000	255
Investment in cooperatives.....	826	1,916	2,125	209
Total.....	53,805	121,944	130,325	8,381
CLAIMS				
Liabilities:				
Real-estate mortgages.....	6,586	4,882	5,140	258
Non-real-estate debt:				
To principal institutions except loans held or guaranteed by CCC.....	1,538	2,302	2,800	498
Loans held or guaranteed by Com- modity Credit Corporation.....	445	81	1,120	1,039
To others ⁴	1,455	1,800	2,200	400
Total.....	10,024	9,065	11,260	2,195
Proprietors' equities.....	43,781	112,879	119,065	6,186
Total.....	53,805	121,944	130,325	8,381

¹ Preliminary estimates.

² Includes all crops held on farms and crops held in bonded warehouses as security for Commodity Credit Corporation loans. The net change for 1948-49 is the value of all crops and livestock at the end of the year minus the value of all crops and livestock at the beginning of the year.

³ Estimated value for 1940 plus purchases minus depreciation.

⁴ Tentative. Includes individuals, merchants, dealers, and other miscellaneous lenders.

The Flame Cultivator Has Not Yet Solved Cotton Weed Problem

CONTROL of weeds and grass is one of the toughest problems facing southern farmers who want to completely mechanize their cotton production. Only in fields largely free of plant pests can good results be obtained with cotton harvesting machines.

Among the newer machines being used by some farmers in an attempt to solve the weed problem is the flame cultivator. To find out how these machines compare with older methods of weed control, a study of flame cultivation on representative plantations in the Mississippi Delta is being made by the Mississippi Agricultural Experiment Station and the Bureau of Agricultural Economics. This work is part of a larger study of the economics of cotton mechanization which is financed partly by funds appropriated under the Research and Marketing Act of 1946.

Information on the flame cultivator was obtained from 27 Delta plantation operators who used a total of 40 machines in 1947. Since the study covers 1 year only, it is not conclusive. However, it points to some of the limits to the use of flame cultivation.

Most Are 4-Row Machines

Flame cultivators have been improved greatly since they were introduced into the Delta in the late 1930's. The type most often used on Delta farms in 1947 was a tractor-mounted four-row machine with two burners per row supported by skids. The fuel used was liquefied petroleum gas, either propane or butane, which was carried in a tank able to withstand pressures up to 250 pounds per square inch or more. Some machines were equipped with vaporizers while others depended on natural evaporation to supply a steady supply of gas to the burners. Nearly all machines were equipped with quick cut-off valves which made it easy to control the flame when turning or when making quick field stops.

Thirty-four of the flamers covered in the study were four-row machines; the other six, two-row. The larger machines cost an average of \$639 and the two-row flamers about \$100 less.

Sweeps Take More Skill

Flamers are used with or without regular cultivator sweeps. When sweeps are used, more skill is required of the tractor driver. Farmers who used flame cultivators with sweeps averaged eight cultivators for the season. Two were with sweeps only, and the rest with both flame and sweeps. Farmers who used flaming equipment without sweeps cultivated nine times, six with sweeps only and three with flame only.

Farmers who used flame cultivators chopped or thinned cotton once by hand. They also used hand labor for hoeing grass and weeds, usually about one time over.

Operating a four-row flame cultivator without cultivator sweeps in the 1947 season cost these farmers an average of about \$459. This includes \$189.50 for fuel, \$64 for depreciation on the basis of an estimated life of 10 years, \$15.98 for interest on investment, \$3.12 for labor for mounting or dismounting the machine on the tractor and \$180 for tractor expenses and wages of the tractor driver. The machines operated an average of 150 hours during the season at an average cost of \$3.06 per hour including labor and power. The addition of cultivator sweeps to the flaming unit adds little to the cost and allows the performance of two operations in one.

Tests comparing the efficiency of flame cultivation with hand chopping were made on four plantations. Two fields similar in soil, drainage and production practices were selected on each plantation. The flame cultivator was used on one and hand chopping on the other. Labor, power and machinery

costs for weed control averaged \$19.24 per acre on fields where flammers were used compared with \$22.61 per acre on the others.

Fields which had been flamed had only about a fifth as much grass at the end of cultivating season as those on which flammers were not used. Average weed and vine growth was about the same on flamed as on unflamed fields. The major weeds and grasses that resisted flaming were Johnson grass, hogweeds and cockleburrs. Tie vines, crabgrass and coco grass were difficult to control when large.

Flame cultivators kill weeds most effectively in fields in which the ground between rows has been cultivated fairly flat. Several flamings are needed to get best results.

A Critical Period

Cotton plants must be six to eight inches tall and $\frac{3}{16}$ of an inch in diameter at the ground before they can withstand flaming. As a result, the period between planting and the time the cotton is large enough to flame is critical since grass and weed infestation is likely to become heavy. The machine gives best results when grasses and weeds are small. Long rainy periods during the growing season offer a similar obstacle. Weeds may become so thick that flame cultivators, in conjunction with sweep cultivation, cannot clean the crop.

The main conclusion of the 1947 study of flame cultivation in the Mississippi Delta is that although the flamer has been greatly improved, it is not yet the full solution to the problem of weed control.

However, further study will be needed to determine conclusively the role of the flame cultivator in cotton production. As yet, information is not available which makes it possible to compare yields per acre, ease of harvesting, grades of cotton and net returns per acre on fields cultivated with and without the flamer.

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Outlook Highlights

.... March 1949 ...

Downward Drift Continues

Farmers' prices have been drifting downward an average of about two percent a month since mid-summer. By mid-February, the index of prices received by farmers was down to 258, four percent below January 1949 and 16 percent below the peak of January 1948.

Dropping prices for farm and food products have been responsible for most of the declines in the price indexes that have been getting headlines.

The all-commodity index of wholesale prices published by the Bureau of Labor Statistics was five percent below the August peak in January. Practically all of the drop was due to lower prices for farm products and foods. Although fuel, lighting materials, textiles, and hides and skins have declined some, nonfarm products as a group have changed little.

The index of urban consumers' prices is down about two percent since the peaks of August and September. A six percent drop in food prices and lower clothing prices accounted for most of the decline.

Larger Supplies Cause Lower Prices

Farm price declines since last summer are due chiefly to:

Larger supplies of many commodities as a result of big 1948 crops.

An improved world food situation which may lead to smaller exports of some farm products.

In addition, there has been some weakening in economic activity. Unemployment from December to January made the biggest monthly increase since the end of the war. Industrial production is below recent peaks. Salary and wage payments have declined slightly and sales at department stores are below a year ago. Generally, however, economic activity remains high.

Prices Paid Down Little

Prices farmers pay haven't shown nearly as much a tendency to go down

Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	5-year average		Feb. 15, 1948	Jan. 15, 1949	Feb. 15, 1949	Parity price Feb. 15, 1949
	August 1909-July 1914	January 1935-December 1939				
Wheat (bushel).....dollars..	0.884	0.837	2.12	2.02	1.94	2.17
Rye (bushel).....do.....	.720	.654	1.94	1.44	1.23	1.76
Rice (bushel).....do.....	.813	.742	13.14	2.47	2.32	1.99
Corn (bushel).....do.....	.642	.691	1.92	1.25	1.12	1.57
Oats (bushel).....do.....	.399	.340	1.04	.762	.689	.978
Barley (bushel).....do.....	.619	.533	1.72	1.15	1.04	1.52
Sorghum grain (100 pounds).....do.....	1.21	1.17	2.77	2.22	2.07	2.96
Hay (ton).....do.....	11.87	8.87	19.10	19.80	20.50	29.10
Cotton (pound).....cents.....	12.4	10.34	30.71	29.27	29.14	30.38
Cottonseed (ton).....dollars.....	22.55	27.52	88.60	65.70	53.40	55.20
Soybeans (bushel).....do.....	1.96	.954	2.97	2.27	2.05	2.35
Peanuts (pound).....cents.....	4.8	3.55	10.0	10.5	10.3	11.8
Flaxseed (bushel).....dollars.....	1.69	1.69	5.73	5.75	5.75	4.14
Potatoes (bushel).....do.....	4.697	.717	1.93	1.66	1.72	1.80
Sweetpotatoes (bushel).....do.....	.878	.807	2.31	2.36	2.44	2.15
Apples (bushel).....do.....	.96	.90	1.99	2.85	2.97	2.35
Oranges on tree (box).....do.....	12.29	1.11	.89	1.23	1.10	3.69
Hogs (hundredweight).....do.....	7.27	8.38	21.60	20.10	19.60	17.80
Beef cattle (hundredweight).....do.....	5.42	6.56	120.10	20.00	18.70	13.30
Veal calves (hundredweight).....do.....	6.75	7.80	122.50	25.10	24.30	16.50
Lambs (hundredweight).....do.....	5.88	7.79	120.80	21.90	21.50	14.40
Butterfat (pound).....cents.....	26.3	29.1	84.9	65.7	64.1	64.4
Milk, wholesale (100 pounds).....dollars.....	1.60	1.81	15.01	14.52	4.33	3.92
Chickens (pound).....cents.....	11.4	14.9	26.0	30.7	29.5	27.9
Eggs (dozen).....do.....	21.5	21.7	45.0	47.1	41.8	52.7
Wool (pound).....do.....	18.3	23.8	41.8	48.3	52.6	44.8

1 Revised.

2 Comparable base price, August 1909-July 1914.

3 Comparable price computed under the Steagall amendment.

4 1919-28 average of \$1.12 per bushel used in computing parity.

5 1919-28 average for computing parity price.

6 Not adjusted for seasonal variation.

as the prices they receive. The index of prices paid by farmers including interest and taxes was 245 in mid-February, only about 2 percent below the August 1948 record.

Because of the greater decline in prices received, the parity ratio for mid-February was down to 105, the lowest since July 1942.

No Change in Consumption

Americans are expected to eat about the same amount of food per person this year as in 1948 when consumption was 12 percent above prewar. No sharp decline in retail prices is likely, though they are expected to average below the record of last year.

Compared with 1948, consumers will have more pork, less of other meats, more fats and oils, about the same amount of poultry, eggs and major dairy products. Consumption of butter, cereal products, dried fruits, potatoes, and sweetpotatoes per person probably will stay below the prewar averages.

Meat Prices Continue Down

Meat production has decreased seasonally since December but prices of most meat animals have continued down. In early February, hog prices were the lowest since OPA controls ended in 1946.

Part of the price declines of last fall were due to the fact that production was gaining seasonally. Price weakness in the last couple of months indicates a weakening in demand, probably due to the slackening in employment and incomes.

Stronger Dairy Prices Likely

Even though output will increase seasonally, prices of manufactured dairy products are not likely to decline significantly in the first half of 1949 because of: 1. The price support program announced for butter; 2. The purchase program for nonfat dry milk.

Fluid milk prices will decline some in coming months but the premium over

(Continued on page 16)

Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) ¹	Total income of indus- trial workers (1935-39 = 100) ²	1910-14= 100					Index of prices received by farmers (August 1909-July 1914= 100)			
			Average earn- ings of factory workers per worker	Whole- sale prices of all com- modities ³	Prices paid by farmers		Farm wage rates ⁴	Livestock and products			
					Com- modi- ties	Com- modities, interest, and taxes		Dairy prod- ucts	Poul- try and eggs	Meat ani- mals	All live- stock
1910-14 average.....	58	50	100	100	100	100	100	100	101	101	101
1915-19 average.....	72	90	152	158	151	150	148	148	154	163	152
1920-24 average.....	75	122	221	160	161	173	178	159	163	123	142
1925-29 average.....	98	129	232	143	155	168	179	160	155	148	154
1930-34 average.....	74	78	179	107	122	135	115	105	94	85	93
1935-39 average.....	100	100	100	100	100	100	100	100	100	100	100
1940-44 average.....	192	238	325	139	150	147	212	162	146	171	164
1945 average.....	203	291	403	154	180	172	350	197	196	210	203
1946 average.....	170	275	392	177	202	193	378	242	198	256	240
1947 average.....	187	332	440	222	246	231	408	269	221	340	293
1948 average.....	⁵ 192	⁶ 364	⁶ 475	⁶ 241	264	249	432	297	236	371	320
1948											
February.....	194	354	462	235	263	248	-----	307	218	331	300
March.....	191	358	466	236	262	247	-----	298	212	342	302
April.....	188	341	463	238	264	249	420	296	214	347	304
May.....	192	350	464	239	265	250	-----	291	211	361	309
June.....	192	361	472	243	266	251	-----	291	221	390	325
July.....	185	361	³ 473	246	266	251	431	300	234	417	344
August.....	191	³ 377	483	247	266	251	-----	305	247	411	344
September.....	192	380	³ 484	246	265	250	-----	302	253	408	343
October.....	195	378	³ 488	241	263	249	427	289	290	373	323
November.....	⁵ 195	375	³ 489	239	262	248	-----	284	272	351	313
December.....	192	⁶ 374	⁶ 494	237	262	248	-----	283	260	339	305
1949											
January.....	⁶ 191	-----	-----	234	260	248	441	275	240	330	295
February.....	-----	-----	-----	-----	257	245	-----	264	218	315	280

Year and month	Index of prices received by farmers (August 1909-July 1914=100)								Parity ratio ⁷	
	Crops							All crops and live-stock		
	Food grains	Feed grains and hay	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops			All crops
1910-14 average.....	100	101	102	96	98	99	-----	99	100	100
1915-19 average.....	193	164	187	168	187	125	-----	168	162	166
1920-24 average.....	147	126	192	189	149	148	⁸ 143	160	151	86
1925-29 average.....	140	119	172	145	129	141	140	143	149	89
1930-34 average.....	70	76	119	74	72	94	106	86	90	66
1935-39 average.....	94	95	178	83	106	83	102	97	107	84
1940-44 average.....	123	119	245	131	159	133	172	143	154	103
1945 average.....	172	161	366	171	215	220	224	201	202	117
1946 average.....	201	195	382	228	244	226	204	226	233	121
1947 average.....	271	246	380	261	335	194	249	261	278	120
1948 average.....	250	249	387	259	326	157	238	250	287	115
1948										
February.....	251	261	374	248	333	136	320	257	279	112
March.....	260	284	372	256	339	140	295	262	283	115
April.....	268	291	371	275	351	142	340	276	291	117
May.....	261	282	370	284	357	141	262	267	289	116
June.....	249	278	370	284	364	155	213	261	295	118
July.....	240	256	370	266	366	172	213	253	301	120
August.....	227	235	366	245	310	183	172	236	293	117
September.....	223	223	406	250	282	185	150	231	290	116
October.....	226	192	418	251	270	174	176	227	277	111
November.....	234	181	412	246	283	157	186	224	271	109
December.....	236	184	415	239	283	164	209	228	268	108
1949										
January.....	232	187	412	236	274	180	282	238	268	108
February.....	221	173	412	235	244	181	285	233	258	105

¹ Federal Reserve Board represents output of mining and manufacturing; monthly data adjusted for seasonal variation.

² Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised August 1948.

³ Monthly data adjusted for seasonal variation.

⁴ Bureau of Labor Statistics.

⁵ Revised.

⁶ Preliminary.

⁷ Ratio of prices received to prices paid for commodities, interest and taxes.

⁸ 1924 only.

Outlook Highlights

(Continued from page 14)

prices of manufacturing milk is likely to stay large for awhile.

USDA Buying Eggs

USDA began purchasing eggs for price support in January and through February 19 had bought the equivalent of 23 million dozen in dried form. The 35-cent minimum price has been continued through May.

Egg prices have declined along with the seasonal upturn in output. Prices averaged 41.8 cents on February 15, down 5.3 cents from January.

Sharp Slump in Feed Grains

Sharp drops in late January and early February cut prices of feed grains 15 to 30 cents a bushel. Many of the byproduct feeds were down \$10 to \$20 per ton. In Mid-February, corn averaged about 32 cents below the national average loan rate.

Exports of feed grain in the first half of 1949 probably will total around 3 million tons compared with 504,000 tons in the first half of 1948.

Four-Fifths of Wheat Procured

About 89 million bushels of wheat still need to be procured if 1948-49 exports are to reach 500 million bushels.

In late February, wheat prices were again moderately above the support level after dropping well below earlier in the month.

Cotton Prices Holding Up

Export demand for cotton continues good and domestic mill demand has increased. In February spot prices of cotton averaged nearly as high as for any other month this season.

Entries under Government loan—mostly better grade cotton—have declined to around 70,000 bales per week. In February, it appeared likely that as much as six million bales may be placed under loan this season.

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